

# BIOLOGICAL EVALUATION

Fletcher Junction Drilling Project

Bridgeport Ranger District  
Humboldt-Toiyabe National Forest  
Mineral County, NV

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Date: August 19, 2005

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## **INTRODUCTION**

The purpose of this biological evaluation (BE) is to analyze potential impacts to U.S. Forest Service, Intermountain Region (Region Four) listed sensitive species from the Pediment Gold LLC proposal of exploratory drilling in the Fletcher, NV area on the Bridgeport Ranger District, Humboldt-Toiyabe National Forest (HTNF).

This BE was prepared in accordance with Forest Service Manual (FSM) direction 2672.42 and meets legal requirements set forth under Section 7 of the Endangered Species Act of 1973, as amended, and implementing regulations [19 U.S.C. 1536 (c), 50 CFR 402.12 (f) and 402.14 (c)].

## **CURRENT MANAGEMENT DIRECTION**

Current management direction on desired future conditions for Threatened, Endangered and Sensitive species on the HTNF can be found in the following documents, filed at the District Office:

- Forest Service Manual and Handbooks (FSM/H 2670)
- National Forest Management Act (NFMA)
- Endangered Species Act (ESA)
- National Environmental Policy Act (NEPA)
- Toiyabe National Forest Land and Resource Management Plan (LRMP)
- Sierra Nevada Forest Plan Amendment (SNFPA)
- Recovery Plans for individual species
- Intermountain Region (R4) Sensitive Species List
- Conservation Strategy for *Phacelia monoensis*

## **CONSULTATION**

A threatened and endangered species list from the United States Fish and Wildlife Service was received on July 12, 2005 (Appendix C - File No. 1-5-02-SP-188) and will be file at the Bridgeport Ranger District office for public review. This list showed no potential habitat for threatened or endangered species for the project area.

## **PROPOSED ACTION**

The Pediment Gold proposed operation is an exploration drilling program consisting of twenty reverse circulation drill holes. As shown on the map (Attachment A), eight of the twenty proposed drill holes will be drilled from or adjacent to existing roads. The other twelve proposed drill holes will require approximately 2,600 linear feet of access road rehabilitation or construction. The access roads will be approximately 12 to 15 feet wide and a maximum width of disturbance not exceeding 30 feet, for a total proposed road disturbance of 78,000 square feet or 1.79 acres. Drill pads will be constructed at the proposed sites with the maximum dimension of 2,300 and 3,700 square feet each, for a total maximum site disturbance of 1.69 acres. Cumulatively, site access will require approximately 15,560 linear feet of non-disturbing, overland traversing, and the removal of potentially twenty five trees. Within each of the 20 proposed drill sites, a sump will be excavated with the dimension of approximately 6 feet by 10 feet by 5 feet deep to contain water overflow and to trap drill cuttings. Within the drill site disturbance areas, the

sumps will disturb approximately 2,400 square feet or 0.05 acres. The total disturbance associated with roads, sites and sumps will affect approximately 3.55 acres. The maximum depth of each drill hole will not exceed 1,000 feet in depth and the maximum diameter is 5.26 inches. Upon completion and prior to leaving the site, the holes will be plugged per requirements set forth in the Nevada Administrative Code (NAC) 534.4369, 534.4373 and 534.420.

Reclamation will be undertaken after the drilling is completed, including backfilling the sumps, recountouring and seeding all areas of disturbance. Seeded areas will be monitored for site stability and revegetation success for a minimum of 3 years or until attainment of revegetation standards (NDEP Nevada Guidelines for Successful Revegetation and the U.S. Forest Service Instruction Memorandum Number NV-13). Seeding will occur at the appropriate time of year by broadcast method followed by raking to leave a textured surface, using U.S.F.S. approved and certified weed free seed mix. Final reclamation will be completed within two years of project completion. During the execution of the drilling project, on-site best management practices will be implemented to contain drill cuttings, drill water, and to maintain sites in a clean, neat and safe manner.

All exploratory activities will occur outside of the breeding season for sage grouse (March- April) in the southern drill locations. This will reduce the impact of noise to sage grouse from construction during the breeding season.

#### **AFFECTED ENVIRONMENT**

The Fletcher Junction Drilling Project is located south of Fletcher Junction, at the northern portion of the Aurora Crater on the Humboldt-Toiyabe National Forest, Bridgeport Ranger District, Mineral County, Nevada (T 6N R 28E, Sections 19, 20, 29, 30 & 31; T 5N R 27E Sections 25 & 36; T 5N R 27E Section 1). The area is comprised of basalt with sandy soils, at elevations ranging from 6150 to 6500 feet. Two maps of the project area with wildlife and botany field survey routes and dates are included in Attachment A.

The plant communities are comprised of an overstory of single leaf pinion pine and Utah juniper, with mountain sagebrush, low sagebrush, hopsage, Nevada ephedra and rabbitbrush dominating the understory. A number of forbs and grasses were observed throughout the project area, including Galeta grass, needle and thread grass, squirreltail grass, Indian ricegrass, cushion buckwheat, sulfur flower buckwheat, pincushion flower, monkeyflower, gilia, and prickly phlox.

During the field survey it was observed that many pinyon pine have died in the area, and most of the trees look stressed, with many yellow and brown needles from this year's growth. Most trees throughout the area were exuding pitch.

Two species of cactus were documented during the field surveys including, sand cholla (*Opuntia pulchella*) and Mohave prickly pear (*Opuntia erinacea*). The plant occurrences of both species were flagged in the field for avoidance during the drilling operations.

Soils and geology for the Fletcher Jct. project area were reviewed in the NRCS *Soil Survey of Mineral County Area, Nevada*. The proposed drill holes were located in five different soil types identified by the NRCS. The majority of the proposed drill locations (drill holes I,R,S,T,U,V,W,X,Y,Z, J, K and F) are in the Borealis Rock outcrop comprised of volcanic craters and plateaus with sandy soils. Drill holes B and A are in Antholop-Wedlar Association, comprised of stony sandy loam soils. Drill hole C is in Wellsed-Micke-Veet Association, comprised of gravelly sand. Drill holes D and E are in Wellsed-Wedlar Association comprised of gravelly fine sand, and drill hole G is located in Brawley very stony fine sandy loam from altered volcanic rock.

Scree, rock fields, and variable sized rock outcrops were present in and near the project area. Large outcrops were typically present east of the project area at higher elevations. Relatively extensive outcrops were associated with the drainages where drill holes X, Y, Z, and T are situated. None of the outcrops were typical of rimrock associated with gamebirds such as chukar (*Alectoris chukar*), and none were sufficiently large or steep enough to provide nesting habitat for raptors such as golden eagles (*Aquila chrysaetos*) and prairie falcons (*Falco mexicanus*). Golden-mantled ground squirrels (*Spermophilus lateralis*) were a conspicuous species noted in some of the lower elevation rock fields.

## **ANALYSIS PROCESS**

Aerial photos and soil survey maps were reviewed to determine the potential habitat types and plant and animal species, which may be affected by the proposed project. The U.S. Forest Service (USFS) Region 4 Threatened, Endangered and Sensitive (TES) Species List (1995); the Nevada Natural Heritage Program (NNHP) Data Base; the Humboldt-Toiyabe National Forest TES Plant Program; and the Sensitive Plant Field Guide, were used to determine potential habitat requirements for the Region 4 sensitive species.

Prior to conducting field inventories, the probability of occurrence for each species of interest listed by the USFS, the NNHDB, and the Nevada Department of Wildlife (NDOW) Diversity Bureau was reviewed to determine if potential habitat occurred within the project area. This assessment included reviewing previous surveys' results, habitat requirements for species provided by database searches, and a review of each species in local floras and publications, including Intermountain Flora, The Jepson Manual, The Cruciferae of Continental North America, A Flora of Nevada, Threatened and Endangered Plants of Nevada, R4 Sensitive Species List.

Surveys for threatened, endangered, sensitive, and candidate (TESC) plant species and noxious weed species were conducted June 10, 28, and July 15, 2005 by botanist Joan Reynolds. Two surveys were conducted for TESC and other wildlife species June 10 and 26, 2005 by wildlife biologist Sue Fox (Wildlife Resource Consultants).

Intensive surveys were performed on foot, walked in a zigzag pattern, for all TESC plant species throughout the entire proposed project area. The spacing between foot routes varied from 15 to 20 feet. Each drill hole location surveyed included a minimum of a 150

foot area surrounding each hole. All proposed access routes requiring road disturbances were surveyed intensively for TESC plant species within a 150 foot width survey area. Any geological or other unique features were surveyed intensively if adjacent or near the survey area. All of the plant species encountered during the surveys were identified to the lowest taxonomic level and are included in Appendix A.

There were no sensitive or TESC plant species encountered within the project area during the field surveys. No noxious weeds were found within the proposed project area. hoarycress (*Cardaria pubescens*), Russian knapweed (*Centurea repens*) and bull thistle (*Cirsium vulgare*) were noted north of the project area around the spring at Fletcher Junction, and along the main access road to the Aurora town site west of the project area near and in the spring that feeds Bodie Creek/Rough Creek. GPS points and invasive species records were documented for the three noxious weed species and are included in Appendix B.

Intuitive field surveys were performed for TESC wildlife throughout the entire project area, with intensive searches conducted in all areas of suitable habitat. Surveys were performed at the appropriate time of year when potentially occurring sensitive species area identifiable and visible. A species list of all wildlife directly observed or detected by sign (e.g., scat, tracks) was compiled (see Appendix A).

## **SPECIES CONSIDERED AND EVALUATED**

### **MAMMALS**

Spotted bat ( <i>Euderma maculatum</i> )	Sensitive
Western (Pale Townsend's) big-eared bat ( <i>Corynorhinus (=Plecotus) townsendii pallascens</i> )	Sensitive
North American wolverine ( <i>Gulo gulo luteus</i> )	Sensitive
Fisher ( <i>Martes pennanti</i> )	Sensitive
Pygmy rabbit ( <i>Brachylagus idahoensis</i> )	Sensitive

### **BIRDS**

Mountain quail ( <i>Oerortyx pictus</i> )	Sensitive
Flammulated owl ( <i>Otus flammeoulus</i> )	Sensitive
California spotted owl ( <i>Strix occidentalis occidentalis</i> )	Sensitive
Great gray owl ( <i>Strix nebulosa</i> )	Sensitive
Northern goshawk ( <i>Accipter gentilis</i> )	Sensitive
White-headed woodpecker ( <i>Picoides alborlarvatus</i> )	Sensitive
Three-toed woodpecker ( <i>Picoides tridactylus</i> )	Sensitive
Sage grouse ( <i>Centrocercus urophasianus</i> )	Sensitive

### **REPTILES AND AMPHIBIANS**

Spotted frog ( <i>Rana pretiosa</i> )	Sensitive
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### **PLANTS**

Charleston angelica ( <i>Angelica scabrida</i> )	Sensitive
Charleston pussytoes ( <i>Antennaria soliceps</i> )	Sensitive
Bodies Hills rockcress ( <i>Arabis bodiensis</i> )	Sensitive
Ophir rockcress ( <i>Arabis ophira</i> )	Sensitive
Galena Creek rockcress ( <i>Arabis rigidissima</i> var. <i>demota</i> )	Sensitive

White bear desert-poppy ( <i>Arctomecon merriamii</i> )	Sensitive
Rosy King's sandwort ( <i>Arenaria kingii</i> spp. <i>rosea</i> )	Sensitive
Eastwood milkweed ( <i>Asclepias eastwoodiana</i> )	Sensitive
Clokey milkvetch ( <i>Astragalus aequalis</i> )	Sensitive
Funeral milkvetch ( <i>Astragalus funereus</i> )	Sensitive
Scorpion milkvetch ( <i>Astragalus lentiginosus</i> var. <i>scorpionis</i> )	Sensitive
Half-ring pod milkvetch ( <i>Astragalus mohavensis</i> var. <i>hemigyris</i> )	Sensitive
Lee Canyon milkvetch ( <i>Astragalus oophorus</i> var. <i>clokeyanus</i> )	Sensitive
Lavin's egg milkvetch ( <i>Astragalus oophorus</i> var. <i>lavinii</i> )	Sensitive
Spring Mountain milkvetch ( <i>Astragalus remotus</i> )	Sensitive
Toquima milkvetch ( <i>Astragalus toquimanus</i> )	Sensitive
Upswept moonwort ( <i>Botrychium ascendens</i> )	Sensitive
Slender moonwort ( <i>Botrychium lineare</i> )	Sensitive
Dainty moonwort ( <i>Botrychium crenulatum</i> )	Sensitive
Seaside sedge ( <i>Carex incurviformis</i> )	Sensitive
Mohave cryptantha ( <i>Cryptantha tumulosa</i> )	Sensitive
Bodie Hills draba ( <i>Cusickiella quadricosta</i> )	Sensitive
Goodrich biscuitroot ( <i>Cymopterus goodrichii</i> )	Sensitive
Snowy spring parsley ( <i>Cymopterus nivalis</i> )	Sensitive
Arid draba ( <i>Draba arida</i> )	Sensitive
Star draba ( <i>Draba asterophora</i> var. <i>asterophora</i> )	Sensitive
Jaeger draba ( <i>Draba jaegeri</i> )	Sensitive
Serpentine draba ( <i>Draba oreibata</i> var. <i>serpentina</i> )	Sensitive
Charleston draba ( <i>Draba paucifructa</i> )	Sensitive
Nevada willowherb ( <i>Epilobium nevadense</i> )	Sensitive
Spring Mountain goldenweed ( <i>Ericameria compactus</i> )	Sensitive
Mono buckwheat ( <i>Eriogonum ampullaceum</i> )	Sensitive
Toiyabe buckwheat ( <i>Eriogonum esmeraldense</i> var. <i>toiyabense</i> )	Sensitive
Clokey buckwheat ( <i>Eriogonum hermannii</i> var. <i>clokeyi</i> )	Sensitive
Barrel cactus ( <i>Ferocactus cylindraceus</i> var. <i>lecontei</i> )	Sensitive
Clokey greasebrush ( <i>Glossopetalon clokeyi</i> )	Sensitive
Smooth dwarf greasebrush ( <i>Glossopetalon pungens</i> var. <i>glabra</i> )	Sensitive
Sierra Valley ivesia ( <i>Ivesia aperta</i> var. <i>aperta</i> )	Sensitive
Dog Valley ivesia ( <i>Ivesia aperta</i> var. <i>canina</i> )	Sensitive
Charleston ivesia ( <i>Ivesia cryptocaulis</i> )	Sensitive
Jaeger ivesia ( <i>Ivesia jaegeri</i> )	Sensitive
Plumas ivesia ( <i>Ivesia sericoleuca</i> )	Sensitive
Webber ivesia ( <i>Ivesia webberi</i> )	Sensitive
Dune penstemon ( <i>Penstemon arenarius</i> )	Sensitive
Bicolored beardtongue ( <i>Penstemon bicolor</i> ssp. <i>bicolor</i> )	Sensitive
Rose-colored beardtongue ( <i>Penstemon bicolor</i> ssp. <i>roseus</i> )	Sensitive
Death Valley beardtongue ( <i>Penstemon fruticiformis</i> spp. <i>amargosae</i> )	Sensitive
Mono phacelia ( <i>Phacelia monoensis</i> )	Sensitive
Marsh's bluegrass ( <i>Poa abbreviata marshii</i> )	Sensitive
Williams combleaf ( <i>Polycytenium williamsii</i> )	Sensitive
Tahoe yellowcress ( <i>Rorippa subumbellata</i> )	Sensitive

Clokey Mountain sage ( <i>Salvia dorrii</i> var. <i>clokeyi</i> )	Sensitive
Clokey silene ( <i>Silene clokeyi</i> )	Sensitive
Low sphaeromeria ( <i>Sphaeromeria compacta</i> )	Sensitive
Masonic Mountain jewel flower ( <i>Streptanthus oliganthus</i> )	Sensitive
Charleston kittentails ( <i>Synthyris ranunculina</i> )	Sensitive
Alpine goldenweed ( <i>Tonnetus alpinus</i> )	Sensitive
Charleston ground daisy ( <i>Townsendia jonesii</i> var. <i>tumulosa</i> )	Sensitive
Rollins clover ( <i>Trifolium rollinsii</i> )	Sensitive

## **HUMBOLDT-TOIYABE NATIONAL FOREST SENSITIVE SPECIES**

### **A. Wildlife**

The following species do not occur on the Bridgeport Ranger Station: spotted frog and three-toed woodpecker. Therefore, no further analysis will be conducted for these species.

#### **Spotted bat**

The spotted bat has been found in a variety of habitats including ponderosa pine, pinyon-juniper forests, desert scrub, and open pasture and hay fields (Leonard and Fenton 1983). They are found most often in dry, rough desert terrain (Watkins 1977). The distributional range for this species encompasses the project area, although very little is known about their actual population distribution (Whitaker 1980). The spotted bat may be locally abundant but is considered rare over its geographic range. Spotted bats roost alone in rock crevices high up on steep cliff faces. Critical roosting sites are cracks and crevices from 0.8 to 2.2 inches in width in limestone or sandstone cliffs (USDA 1991). There is speculation that they might also roost behind loose tree bark. Spotted bats are thought to forage primarily on moths.

#### **Occurrence in Project Area**

Spotted bats have not been documented in the project area (USFS, NNHP, and NDOW records), however no surveys for bats have been conducted in or near the project area. No roosting habitat of steep cliff faces is present in the project area. There are some rock formations in the vicinity of drill hole sites V, R, W, X, U, T, and Z, but these are generally not steep, cliff-like formations. Nonetheless, they may provide marginally suitable, potential roosting habitat.

#### **Western (Pale Townsend's) big-eared bat**

Townsend's big-eared bat is found from sea level to 10,000 feet in elevation in a variety of habitat types including desert, native prairies, coniferous forests, mid-elevation mixed conifer, mixed hardwood-conifer forests, riparian communities, active agricultural areas, and coastal habitat types (Kunz and Martin 1982). Townsend's are year round residents of California. Individuals usually do not move more than ten kilometers from a roost site (Pierson et al. 1991).

Occurrence of this species is strongly correlated with the availability of caves and cave-like roosting habitat. They roost in caves, abandoned mines, and buildings that offer cave-like spaces. Townsend's big-eared bats are very sensitive to roost disturbance. Night roosts might occur in more open settings, including under bridges (Philpott 1997).

Maternal colonies contain from 35 to 100 individuals and form in the warmest part of the roost structure (Kunz and Martin 1982). The colonies form between March and June, while males remain solitary during summer. Winter hibernating colonies can range in size from a few individuals to several hundred bats. They hibernate throughout their range in caves and mines where temperatures are above freezing but below 55 degrees Fahrenheit.

The Townsend's big-eared bat is a moth specialist and more than 90% of its diet is composed of lepidopterans. Preferred foraging habitat is edge habitats along streams and areas adjacent to and within a variety of wooded habitats. They usually begin foraging well after dark (Kunz and Martin 1982).

This species roosts primarily in caves or cave analogs such as old mine shafts (Pierson et al. 1991), but has also been known to use rocky outcrops and old buildings. In addition, tree cavities and crevices within a thick platey bark structure are used as roosting areas. Red fir trees with this type of bark structure are present in the unnamed drainages south of Tunnel Creek, and to a lesser extent, along the east-facing slopes immediately west of the ROW in Little Valley. Riparian areas and forests with associated high insect densities form important foraging areas.

#### Occurrence in Project Area

Townsend's big-eared bats have not been documented in the project area (USFS, NNHP, and NDOW records). No surveys for bats have been conducted in or near the project area. There is no known suitable roosting habitat for Townsend's big-eared bat within the project area. This species is strongly associated with the presence of caves, or cave analogs for roosting. These features are not present in or adjacent to the project area.

#### **Wolverine**

Within its geographic range, the wolverine occupies a variety of habitats. In the northern Sierra Nevada, habitats that are used include mixed conifer, red fir, and lodgepole pine, wet meadow, and montane riparian habitats (Zeiner et al. 1990). Habitats used in the southern Sierra Nevada include the same types and also alpine dwarf-shrub, montane chaparral, and Jeffrey pine (Zeiner et al. 1990). Subalpine forests, wet meadows, and riparian habitats are also likely used by wolverines. Wolverines prefer areas with low human disturbance.

In summer, wolverines are typically opportunistic omnivores. Small mammals, such as marmots and ground squirrels are the principal prey items. Carrion is an important component of the wolverine's diet. In winter, they are primarily scavengers, often feeding on large animal carrion (e.g. deer), but will also prey on snowbound ungulates (Ruggiero et al. 1994).

Wolverines are primarily nocturnal, but diurnal movements have been recorded. During summer, long distance movements occur at night when temperatures are cooler (Hornocker and Hash 1976). Wolverines have large home ranges, studies indicate from 38 to 347 square miles; males have larger territories than females. Because of these factors, wolverines are rarely seen. Wolverines may move great distances on a daily basis; 15 to 30 miles a day is



common for males, and some individuals have moved 60 to 70 miles in a single day (Ruggiero et al. 1994).

The historic range of wolverines in California included much of the Sierra Nevada (Grinnel et al. 1937; Schempf and White 1977). Because of human activities, wolverines are believed to have become isolated within the Sierra Nevada ecoprovince of California. The known distribution is from Del Norte and Trinity Counties east through Siskiyou and Shasta Counties, and south through the Sierra Nevada to Tulare County (Zeiner et al. 1990). Most observations have been recorded between 4300 to 7300 feet in the northern Sierra Nevada, while in the southern Sierra Nevada sightings have been recorded between 6400 to 10,800 feet (Zeiner et al. 1990).

#### Occurrence in Project Area

Wolverines have not been documented in the project area (USFS, NNHP, and NDOW records), nor were they detected during the field surveys. Suitable habitat is not present as coniferous forest and non-forest alpine habitats do not occur in the project area.

#### **Fisher**

Preferred habitat for fishers includes extensive, continuous canopies, such as dense lowland forests, or mature to old-growth spruce-fir forests with high canopy closure. Fishers use greater percentages of mid-early seral stages for foraging in summer months, but still appear to need and use mature/old growth stands for denning, especially in areas with high snowfall. Forest stands with no understory or with sparse coniferous understory appear to be used most often (Arthur et al. 1989).

Besides maternal dens, fishers use temporary shelters, such as hollow logs, brush, rockpiles, tree nests, or burrows, for sleeping and shelter from bad weather (USDA 1991). Fisher home ranges are as large as ten square miles. Fishers are solitary except during the breeding season between February and April. Females usually give birth in tree dens located in high cavities of large trees. The fisher is primarily a predator, eating small mammals, such as porcupines, snowshoe hares, squirrels, shrews, and mice.

#### Occurrence in Project Area

Fishers have not been documented in the project area (USFS, NNHP, and NDOW records), nor were they detected during the field surveys. No potentially suitable habitat of extensive forested areas, which are necessary for cover and denning sites, are present in the project area.

#### **Pygmy rabbit**

Pygmy rabbits are restricted to sagebrush-steppe areas of the Great Basin and adjacent intermountain regions. Within sagebrush habitat, pygmy rabbits tend to prefer taller and denser sagebrush cover and deep, sandy soils (Gabler et al. 2001). Greater sagebrush cover represents greater food resources for pygmy rabbits, whose diet consists of 51-99% big sagebrush. Grasses and forbs constitute almost half their diet during summer. Greater shrub cover may also provide better protection from predators. Unlike other North American rabbits, the pygmy rabbit digs its own burrow system. Burrow construction

requires soft, deep soils. Reproductive activity begins in late March through May. Females can produce up to three litters a year. The gestation period is 26 to 28 days and litter size ranges from five to eight and average six.

#### Occurrence in Project Area

Pygmy rabbits have not been documented in the project area (USFS, NNHP, and NDOW records). No suitable pygmy rabbit habitat of large, dense stands of sagebrush is present in the project area. No pygmy rabbits or their sign (e.g., burrows, dens) were noted during the field surveys.

#### **Mountain quail**

The mountain quail inhabits open montane forests with well developed brushy understory, steep slopes around edges of mountain meadows, and in logged or burned-over forests from 1,500 to 10,000 feet. During winter these birds migrate to a lower elevation and occupy habitat of mixed trees, brush, and herbs. However, Pope et al. (1999) found that mountain quail do not always migrate between seasons and will often nest within their winter range. Mountain quail use a wide variety of habitat types for breeding, including old growth coniferous forest, mixed shrub and grasslands, regenerating clear-cuts and old burned areas (Pope 2003). Nests are located under logs or fallen pine branches, in weeds, shrubs, or at the base of large trees. Mountain quail were usually found nesting within a few hundred yards of water to provide chicks with required water supply after hatching (Brennan et. al 1987). However, recent studies suggest young mountain quail may receive sufficient hydration from plants found in non-riparian areas and that proximity to a water source may not always be important in selection of breeding habitat (Pope 1999, 2003).

The reproductive period generally begins sometime in late March with pair-bonding and nest site selection and ends in mid-July when the young are hatched and independent. Mountain quail forage on the ground and in low-growing shrubs and feed primarily on plant food such as seeds and green vegetation (e.g., leaves, buds, and flowers). They also feed on seeds, fruit, and insects.

#### Occurrence in Project Area

Mountain quail have not been documented in the project area (USFS, NNHP, and NDOW records), nor were they detected during the field surveys. No suitable habitat of dense vegetation on steep mountainsides, brushy ravines, mountain slopes, and chaparral are present in or near the project area.

#### **Flammulated owl**

Flammulated owls are small insectivorous, cavity nesters. They are often found in association with old growth pine forests mixed with red fir, white fir, western larch, or incense cedar. However, they prefer forests dominated by western yellow pine (ponderosa pine and Jeffery pine). In Nevada, they will use forests with an aspen component. Unlike many owls, the flammulated owl will inhabit second-growth forest (Herron et al. 1985). The owls' preference for older forests is most likely due to its food and habitat requirements (Reynolds and Linkhart 1987). The main food for the owls during cold spring and early

summer nights are cold adapted moths, which are host specific and are limited to these old-growth pine/fir forests. Older forests typically have an open canopy with an abundance of large diameter snags and live trees with suitable nesting cavities. Territories are established in early May and eggs are laid in early June. The young fledge in late July and disperse by September.

#### Occurrence in the Project Area

No suitable nesting habitat for flammulated owls of mixed conifer and aspen stands are present in the project area.

#### **California spotted owl**

Spotted owls occupy mixed conifer, ponderosa pine, red fir and montane hardwood vegetation types. According to the California Spotted Owl Sierran Province Interim Guidelines Environmental Assessment (USDA 1993), nesting and roosting habitat typically includes a forest stand with greater than 70% canopy cover. Optimum habitat consists of dense, mature trees with multiple canopies and abundant snags and down woody material. Nesting habitat is characterized by dense canopy closure (>70%) with medium to large trees and usually at least two canopy layers present. In addition, nest stands usually have some large snags and an accumulation of logs and limbs on the ground (USDA 1993). Foraging habitat can include all medium to large tree stands with 50% or greater canopy closure (Verner et al. 1992).

#### Occurrence in the Project Area

No suitable nesting habitat of mature mixed-conifer stands is present in the project area; therefore, no protocol surveys were conducted.

#### **Great gray owl**

Preferred habitat is mixed coniferous and hardwood forests, usually bordering small openings or meadows (USDA 1991). Optimal habitat is semi-open areas near dense coniferous forests, which the owls use for roosting and nesting. Breeding great gray owls typically occur between 4,000 and 8,000 feet. Courtship and nest site selection occur during late winter. Most nests are in broken-top snags generally greater than 21" dbh and 20 feet tall (USDA 1992). Nests are also found in debris platforms from dwarf mistletoe or in old stick nests of other raptors. Nests are generally located within 1,000 feet from the edges of wet meadows that range in size from 15 to 250 acres. Preferred canopy closure is greater than 70%, although owls use habitat with canopy closure as low as 40% (Zeiner et al. 1990).

The owls prey primarily on voles and pocket gophers throughout the year (Zeiner et al. 1990). High prey density, perch availability, and relatively open forest canopies have been identified as important factors in foraging habitats (Bull et al. 1988). In winter, the owls hunt in early morning and from late afternoon to dusk. During the breeding season, they hunt throughout the day and night. Great gray owls hunt by perching two to 20 feet high at the edges of meadows or grasslands and listening for prey in grass runways or underground burrows. The owls fly low over the ground and drop on their prey (Brunton 1971; Winter 1981).

#### Occurrence in Project Area

No suitable nesting habitat of mature stands of mixed-conifer and meadows are present in the project area, therefore, no protocol surveys were conducted.

#### **Northern goshawk**

Preferred habitat consists of older-age coniferous, mixed, and deciduous forest habitat. The habitat also consists of large trees for nesting, a closed canopy for protection and thermal cover, and open spaces allowing maneuverability below the canopy (USDA 1988). Snags, down logs, and high canopy cover are critical habitat features. The former two are also an important component used by numerous prey species. Many of the species that provide the prey base for goshawks are associated with open stands of trees or natural openings containing an understory of native shrubs and grass (Fowler 1988).

Northern goshawk nesting habitat is characterized by dense canopy closure (50-90%) with mature timber. Nest trees for this species are commonly located on benches or basins surrounded by much steeper slopes (Call 1979). Mature trees serve as nest and perch sites, while plucking posts are frequently located in denser portions of the secondary canopy. The same nest might be used for several seasons, but alternate nests are common within a single territory. The chronology of nesting activity varies annually and elevationally. In general, nesting activities are initiated in February. Nest construction, egg laying, and incubation occur through May and June. Young birds hatch and begin fledging in late June and early July. They are independent by mid-September (USDA 1992).

For goshawks, recommendations for managing forests call not only for maintaining nest stands, but also for developing forest environments that support a variety of their prey species in a 2430 hectare area surrounding each nest (Reynolds et al. 1992). Important components of foraging areas include snags and down logs for prey base populations (Reynolds 1983; USDA 1991). A dependence on one type of prey could conceivably lead to a decline in a predator population if that prey species declined (McGowan 1975; Newton 1979). The diet of the goshawk is typically varied and is not dependent on only one or a few species. Small mammals and birds are the goshawks' primary prey (Verner and Boss 1980; Fowler 1988).

#### Occurrence in Project Area

No suitable nesting habitat of dense stands of mixed-conifer or aspens is present in the project area. Therefore, no protocol surveys were conducted.

#### **White-Headed woodpecker**

White-headed woodpeckers generally inhabit open ponderosa pine forests, but also occur in sugar pine, Jeffrey pine, and red and white fir forests. Preferred habitat is forests with large trees and 40-70% canopy cover. The elevational range is from 4,000 to 9,000 feet. This species usually nests closer to the ground than other species of woodpeckers, about one to two meters above the ground. Soft snags greater than 20" dbh are used for nesting cavities (USDA 1991). The white-headed woodpecker's nesting requirements are similar to flammulated owls. This species can subsist mainly on pine seeds, which make up 60% of its diet. This is an important food source during winter months when insects are scarce. White-

headed woodpeckers breed from mid-April to late August with peak activity from mid-June through mid-July.

#### Occurrence in Project Area

No suitable nesting habitat of mature stands of mixed conifer is present in or near the project area.

#### **Sage grouse**

Sage grouse depend on sagebrush-grassland communities. Lek sites or sage grouse strutting and mating grounds, are usually small open areas, from 0.01 to 10 acres, with low, sparse sagebrush or are denuded of vegetation compared to surrounding habitats (Schroeder et al. 1999). Grassy swales, natural and irrigated meadows where grass has been removed, burned areas, cultivated fields adjacent to sagebrush-grass rangelands, ridge tops, roads, and dry lakebeds are often used as leks (Connelly et al. 2000). Breeding occurs from March to early April and young hatch in early April to late July (Schroeder et al. 1999). Hens generally nest in short sagebrush of medium density (Call 1974) and nests tend to be under the tallest sagebrush in the stand (Connelly et al. 2000). Some studies have shown that nonmigratory hens nest within 1.5 miles of the lek site. However, some migratory birds equipped with radio collars tracked by radio-telemetry have been seen nesting up to three miles from the lek (Crawford and Lutz 1985). Brood-rearing areas include sagebrush, riparian meadows, greasewood bottoms, alfalfa, grain, irrigated pastures and trails. Insects, especially ants and beetles, are an important component of early brood-rearing habitat. Brood habitats that provide a wide diversity of plant species tend to provide an equivalent diversity of insects, which are important chick foods. As sagebrush habitats dry up and herbaceous plants mature, hens move their broods to more moist sites during June and July where more succulent vegetation is available (Klebenow 1969; Gill 1965; Connelly et al. 1988).

Sage grouse populations that are migratory may travel great distances seasonally. Summer and winter ranges may be as far as 50 or more miles apart. If deep snow covers spring and summer ranges, the birds may migrate to lower elevations to find food and cover. Sage grouse winter habitats are relatively similar throughout most of the species range. As their winter diet consists almost exclusively of sagebrush, winter habitats must provide sagebrush that is available above the level of the snow. It is critical that sagebrush be exposed at least 10 to 12 inches above snow level (Hupp and Braun 1989). This provides both food and cover for wintering sage grouse.

#### Occurrence in Project Area

There is marginal potential sage grouse habitat found within the northern-most portion of the project area. Although the area contains some components associated with sage grouse presence, the sagebrush stands lack the density typically associated with quality sage grouse habitat. No sage grouse or their sign (e.g., scat, tracks, feathers, nest, and egg shells) were observed in the project area and there are no reports of sage grouse within the project area (NDOW 2005). According to NDOW, an historical lek occurs within one mile of the project area in the southwest  $\frac{1}{4}$  of section 6. Drill hole G is situated in the northwest  $\frac{1}{4}$  corner of section 6. The lek was active in 2004 and 2005.

## **B. Plants**

It has been determined after using the Humboldt – Toiyabe National Forest TES Plant Program (Weixelmen 2001) and the Nevada Natural Heritage Program (Morefield 2001) that the following plant species do not occur nor have the probability of occurring in Mineral County, Nevada where the project is located. Therefore there will be no impact on these species, and no further analysis of these species will be done. Charleston angelica (*Angelica scabrida*), Charleston pussytoes (*Antennaria soliceps*), Ophir rockcress (*Arabis ophira*), Galena Creek rockcress (*Arabis rigidissima* var. *demota*), White bear desert-poppy (*Arctomecon merriamii*), Rosy King's sandwort (*Arenaria kingii* spp. *rosea*), Eastwood milkweed (*Asclepias eastwoodiana*), Clokey milkvetch (*Astragalus aequalis*), Funeral milkvetch (*Astragalus funereus*), Scorpion milkvetch (*Astragalus lentiginosus* var. *scorpionis*), Half-ring pod milkvetch (*Astragalus mohavensis* var. *hemigyris*), Lee Canyon milkvetch (*Astragalus oophorus* var. *clokeyanus*), Spring Mountain milkvetch (*Astragalus remotus*), Toquima milkvetch (*Astragalus toquimanus*), Mohave cryptantha (*Cryptantha tumulosa*), Goodrich biscuitroot (*Cymopterus goodrichii*), Snowy spring parsley (*Cymopterus nivalis*), Arid draba (*Draba arida*), Jaeger draba (*Draba jaegeri*), Serpentine draba (*Draba oreibata* var. *serpentina*), Charleston draba (*Draba pauciflora*), Nevada willowherb (*Epilobium nevadense*), Spring Mountain goldenweed (*Ericameria compactus*), Toiyabe buckwheat (*Eriogonum esmeraldense* var. *toiyabense*), Clokey buckwheat (*Eriogonum hermannii* var. *clokeyi*), Barrel cactus (*Ferocactus cylindraceus* var. *lecontei*), Clokey greasebrush (*Glossopetalon clokeyi*), Smooth dwarf greasebrush (*Glossopetalon pungens* var. *glabra*), Dog Valley ivesia (*Ivesia aperta* var. *canina*), Charleston ivesia (*Ivesia cryptocaulis*), Jaeger ivesia (*Ivesia jaegeri*), Plumas ivesia (*Ivesia sericoleuca*), Dune penstemon (*Penstemon arenarius*), Bicolored beardtongue (*Penstemon bicolor* ssp. *bicolor*), Rose-colored beardtongue (*Penstemon bicolor* ssp. *roseus*), Death Valley beardtongue (*Penstemon fruticiformis* spp. *Amargosae*), Clokey Mountain sage (*Salvia dorrii* var. *clokeyi*), Clokey silene (*Silene clokeyi*), Low sphaeromeria (*Sphaeromeria compacta*), Charleston kittentails (*Synthyris ranunculina*), Alpine goldenweed (*Tonnetus alpinus*), Charleston ground daisy (*Towsendia jonesii* var. *tumulosa*), and Rollins clover (*Trifolium rollinsii*).

### **Bodie Hills rockcress**

Bodie Hills rockcress (*Arabis bodiensis*) is a perennial herb that typically occurs in rocky crevices, outcrops and steep open slopes, in granitic and volcanic substrates on mountain summits. Bodie Hills rockcress is found at elevations ranging from 6,720 to 10,400 feet in sagebrush associations within the pinyon-juniper, mountain sagebrush, subalpine coniferous forest zones. The Bodie Hills rockcress is known to occur in Mineral County, Nevada and Fresno, Inyo, Mono and Tulare Counties in California. It is known to grow in the Sweetwater Mountains, Bodie Hills, Wassuk Ranges, Brawley Peaks, and in the southern and central high Sierra Nevada. Flowering typically occurs in early-spring (May and early June) in the lower elevations, and after snow melt (June through early August) in the higher elevations (Kartesz 1988, Reynolds 2004). Mineral exploration and development, road construction and maintenance, OHV and recreational use are listed as potential threats for this species.

#### Occurrence In Project Area

Suitable habitat for Bodie Hills rockcress was located in the project area. These features include dry, open to partially shaded sagebrush scrub and pinyon-juniper plant communities. Plant surveys resulted in no detections of plant occurrences.

#### **Lavin's egg milkvetch**

The Lavin's egg milkvetch (*Astragalus oophorus* var. *lavinii*) is known from Douglas, Mineral and Lyon Counties, Nevada, and Mono County, California. It occurs in soft clay and gravelly limestone soils at elevations ranging from 6,000 to 9,000 feet. Lavin's egg vetch is found on dry, hot and exposed hillsides, flats, ridges and open slopes of the pinion-juniper woodlands and sagebrush communities. It flowers from June to July (Conquist 1989, Kartesz 1988). Mineral exploration and development, road construction and maintenance, OHV and recreational use are potential threats for this species.

#### Occurrence in Project Area

Suitable habitat is located for Lavin's egg vetch within the project area. Suitable habitat features included dry, hot exposed hillsides, flats and ridges of the pinyon-juniper woodlands and sagebrush plant communities. Plant surveys resulted in no detections of plant occurrences.

#### **Upswept moonwort**

Upswept moonwort (*Botrychium ascendens*) grows in wet to moist meadows in conifer forests. The small fern grows in habitats comprised of mosses, grasses, sedges, and rushes and other vegetation. Upswept moonwort may be found with other moonworts including *B. crenulatum*, *B. lunaria*, and *B. minganense*. In Nevada, the habitat is described as moist ground of spring head areas in deep shade on north-facing slopes often with shooting stars (*Dodecatheon redolens*) from 8,891 to 11,155 feet. Upswept moonwort is widely scattered in western North America including Nevada and California. The sites are usually localized and rare. In Nevada, upswept moonwort is known only from the Spring Mountains, but has not been systematically surveyed for in Nevada.

#### Occurrence in Project Area

There is no potential habitat for upswept moonwort within the project area due to the lack of moist, spring areas, and due to the lower elevation of the project area.

#### **Dainty moonwort**

Dainty moonwort (*Botrychium crenulatum*) grows in riparian areas wet to moist meadows in conifer forests where they grow in mosses, grasses, sedges, and rushes and other vegetation. In Nevada, dainty moonwort is found from 8,202 to 11,150 feet. Dainty moonwort is found in the western North America, but is localized and rare. In Nevada, upswept moonwort is known only from the Spring Mountains, but has not been systematically surveyed in Nevada and may occur in isolated pockets in many of the higher and wetter mountains in Nevada.

#### Occurrence in Project Area

There is no potential habitat within the project area for dainty moonwort due to the lack of moist, spring and meadow areas and due to the lower elevation of project area.

#### **Slender moonwort**

Slender moonwort (*Botrychium lineare*) is found usually at higher elevations in montane forest or meadow habitats, however the typical habitat is difficult to describe in elevation (FWS 2001, Wagner and Wagner 1994). The described habitats have ranged from roadside in open habitat dominated by low-growing forbs; meadow dominated by knee-high grass; shaded woods, and woodlands; grass-to-forb-dominated openings in forest pine, spruce, and fir forests; grassy horizontal ledges on a north-facing limestone cliff; and a flat upland section of a river valley. Elevation ranges up to 9,840 feet. Population are threatened by habitat destruction and fragmentation from road construction and maintenance, including herbicide spraying, recreational activities, grazing and trampling by wildlife and livestock, development, timber harvest, and competition from non-native plant species (FWS 2001).

#### Occurrence in Project Area

There is no potential habitat for slender moonwort within the project area. The project area lacks habitat components associated with slender moonwort, such as montane forest or meadow habitats.

#### **Seaside sedge**

The seaside sedge (*Carex incurviformis* var. *danaensis*) occurs in alpine and subalpine moist tundra and wet rock ledges at elevations of 10,000 to 13,120 feet. Seaside sedge is found in California, Colorado and Wyoming. In California, it is found in Inyo, Mono, Tulare, and Tuolumne (California Native Plant Society 2002).

#### Occurrence in Project Area

There is no potential habitat for seaside sedge due to the lack of moist tundra and wet rock ledge habitats, and due to the low elevation of the project area.

#### **Bodie Hills draba**

The Bodie Hills draba (*Cusickiella quadricostata*) is known to occur in Mineral and Douglas Counties in Nevada, and Mono County in California. This species occurs on clay soils at elevations ranging from 6,000 to 9,200 feet. Bodie Hills draba is found in a number of plant communities including low sagebrush grasslands, pinyon-juniper woodlands, mountain sagebrush grasslands and mountain mahogany woodlands. Habitat for this species is usually found at middle to high mountains on flats, ridges and windswept side-slopes. Flowering occurs from May through June.

#### Occurrence in Project Area

The project area is composed of primarily granitic and sandy soils and lacks the clay soils associated with Bodie Hills draba.



**Star (Tahoe) draba**

Star draba (*Draba asterophora* var. *asterophora*) is an alpine perennial forming large mats through vegetative reproduction. These plants grow in rock crevices and granite talus slopes at high elevations between 8,000 and 10,200 feet elevation. Slopes are typically north facing and frequently hold patches of snow throughout the summer months. The most frequently cited locations for star draba are characterized by extensive scree slopes of granitic material ranging in size from sand to small boulders. Seven distinct populations occur within a discontinuous distribution between Washoe County, Nevada and to Mt. Gibbs near Tioga Pass in Yosemite, CA: Mt. Rose Ski Area/ Slide Mountain; Mt. Rose; Rose Knob; Heavenly Valley (Lake Tahoe Basin Management Unit); Job's Peak (Lake Tahoe Basin Management Unit); Yosemite; and Echo Lake (El Dorado National Forest).

**Occurrence in Project Area**

There is no potential habitat for Star draba within the project area due to the lack of granitic outcrops and steep talus habitats, and due to the low elevation of the project area.

**Mono buckwheat**

The Mono buckwheat (*Eriogonum ampuliceum*) is known from the eastern slope of the Sierra Nevada in Mono County, California, and in western Nevada from Alkali Valley on the north side of Alkali Lake in Mineral County. It is found in sandy pumice soils at elevations ranging from 6,400 to 6,900 feet. Mono buckwheat is an annual that flowers in June through August (Reveal 1997).

**Occurrence in Project Area**

There are suitable habitat features within the project area for Mono buckwheat, including sandy pumice soils and sagebrush with pinyon-juniper woodland plant communities. No plant occurrences were found during the field surveys.

**Mono phacelia**

The Mono phacelia (*Phacelia monoensis*) is known from Nye, Lyon and Mineral Counties, Nevada and in Mono County, California. This plant occurs in disturbed areas where it colonizes barren or sparsely vegetated soils and is also found on naturally eroding badlands. It is found growing on alkaline meadows, rocky ridges and in granitic or clay soils in low sagebrush steppe or pinyon-juniper woodlands. It occurs at elevations ranging from 6,000 to 9,000 feet. Mono County phacelia is an annual which flowers from May to July, depending on spring time weather conditions (Hickman, 1993, Kartesz 1988). Threats to this species include any activity that promotes invasive weed infestation, mining and road maintenance.

**Occurrence in Project Area**

There is no potential habitat for Mono phacelia within the project area due to the lack of alkaline or clay soils. Soils/geology of the project area is comprised primarily of volcanic rock outcrops with very sandy soils.

### **Marsh's bluegrass**

Marsh's bluegrass (*Poa abbreviata* ssp. *marshii*) is a dwarf perennial alpine grass found in alpine habitats from 11,600 to 12,000 ft. The habitats are described as alpine scree and talus and boulder and rock fields. Characteristic of this habitat are strong cold winds, intense illumination. Marsh's bluegrass has been documented in Nevada (one known occurrence), California (one known occurrence), and Idaho.

#### Occurrence in Project Area

There is no potential habitat for Marsh's bluegrass due to the lack of alpine habitat characteristics and the low elevation of the project area.

### **William's combleaf**

The William's combleaf (*Polycstenium williamsiae*) is known from the foothills of Little Washoe Lake in the Virginia Range of Washoe County, Nevada and in Mono County, California. It occurs on the edges of ephemeral lakes/vernal ponds at elevations ranging from 5,600 to 5,700 feet. William's combleaf is a perennial herb that flowers in May and June.

#### Occurrence in Project Area

There is no potential habitat within the project area for William's combleaf due to the lack of ephemeral lakes.

### **Masonic Mountain jewel flower**

The Masonic Mountain jewel flower (*Streptanthus oliganthus*) is known from western Nevada in Mineral and Lyon Counties, and in Mono and Inyo Counties, California. It typically grows on rocky slopes or talus, on flat areas, in ravines, and in canyon bottoms. The soils are described as sandy or gravelly of decayed granite or decomposing volcanic rock. On the Bridgeport Ranger District, it has been reported to grow along roadsides and in old dumps as well as in litter under trees. Slopes varied from zero to 20 degrees on all aspects. The elevation ranges are reported from 6,400 to 10,000 feet. It is reported from the pinyon-juniper zone but reports also include the Jeffery pine and sagebrush-grass zones. This species flowers from May to July.

#### Occurrence in Project Area

There are suitable habitat features for Masonic Mountain jewel flower within the project area, including sandy soils, volcanic rock outcrops, with sagebrush and pinyon-juniper plant communities. No plant occurrences were observed during the field surveys.

## **EFFECTS AND DETERMINATIONS OF PROPOSED ACTION ON LISTED AND SENSITIVE SPECIES**

### **A. Wildlife**

**Spotted bat:** There is marginal, potentially suitable roosting habitat in the rock outcrops in the upper elevations of the project area. Spotted bats have not been documented in the project area (USFS, NNHP, and NDOW records). However species occurrence within the project area is unknown as no surveys for bats have been conducted in or near the project

area. Noise from drilling equipment and the human presence may disturb day-roosting bats in the rock formations. However, the rocks formations will not be removed or altered by project activities so suitable roosting habitat will still be available following project implementation. Therefore, it is my determination that this project may impact individuals but is not likely to cause a trend to federal listing or a loss of viability.

**Western (pale Townsend's) big-eared bat:** There is no potential habitat for western (pale Townsend's) big-eared bats within the project area due to the lack of suitable roosting habitat, which consists of caves or cave analogs. Therefore, it is my determination that this project will not impact western (pale Townsend's) big-eared bat or their habitat.

**Wolverine:** Suitable habitat of coniferous forest and non-forest alpine habitats with the necessary components of denning habitat such as rocks and boulders, do not occur in the project area. Therefore, it is my determination that this project will not impact wolverines.

**Pacific fisher:** There is no potential habitat for fishers due to the lack of extensive forested areas, which provide cover and suitable denning sites. Therefore, it is my determination that this project will not impact Pacific fishers.

**Pygmy rabbit:** No suitable pygmy rabbit habitat of large, dense stands of sagebrush is present in the project area. No pygmy rabbits or their sign (e.g., burrows, dens) were noted during the field surveys. Therefore, it is my determination that this project will not impact pygmy rabbits.

**Mountain quail:** Mountain quail have not been documented in the project area (USFS, NNHP, and NDOW records), nor were they detected during the field surveys. No suitable habitat of dense vegetation on steep mountainsides, brushy ravines, mountain slopes, and chaparral are present in or near the project area. Therefore, it is my determination that this project will not impact mountain quails or their habitat.

**Flammulated owl:** Flammulated owls have not been documented in the project area (USFS, NNHP, and NDOW records), nor were they or their sing detected during the field surveys. No suitable nesting habitat of mixed conifer and aspen stands are present in the project area. Therefore, it is my determination that this project will not impact flammulated owls or their habitat.

**California spotted owl:** California spotted owls have not been documented in the project area (USFS, NNHP, and NDOW records), nor were they detected during the field surveys. No suitable nesting habitat of mature mixed-conifer stands is present in the project area. Therefore, it is my determination that this project will not impact California spotted owls or their habitat.

**Great gray owl:** No suitable nesting or foraging habitat of mature stands of mixed conifer and meadow habitats are present within the project area. Therefore, it is my determination that this project will not impact great gray owls or their habitat.

**Northern goshawk:** No suitable nesting or foraging habitat of dense stands of mixed-conifer or aspens is present in the project area. Therefore, it is my determination that this project will not impact northern goshawks or their habitat.

**White-headed woodpecker:** No suitable nesting habitat of mature stands of mixed conifer is present in or near the project area. Therefore, it is my determination that this project will not impact white-headed woodpeckers or their habitat.

**Sage grouse:** There is potential sage grouse nesting habitat found within the project area, but this habitat is limited to the northern-most portion of the project area. Although there are stands of low and mountain sagebrush which may provide some habitat, no sage grouse or their sign (e.g., scat, tracks, feathers, nest, and egg shells) were observed in the project area and there are no reports of sage grouse within the project area (NDOW 2005). NDOW reports a lek located within one mile of the project area in the southwest ¼ of section 6. Drill hole G is situated in the northwest ¼ corner of section 6. The lek was active in 2005 and 2004. Due to the location of this new recorded lek and the proximity to the southern-most drill locations, no construction activities will occur in the southern-most portion of the project area during the breeding season for sage grouse (March-April); therefore it is my determination that this project will not impact sage grouse.

## **B. Plants**

**Bodie Hills rockcress:** Suitable habitat for Bodie Hills rockcress was located in the project area. These features include dry, open to partially shaded sagebrush scrub and pinyon-juniper plant communities. However, plant surveys resulted in no detections of plant occurrences; therefore it is my determination that there will be no impact to Bodie Hills rockcress.

**Lavin's egg milkvetch:** Suitable habitat is located for Lavin's egg vetch within the project area. However, plant surveys resulted in no detections; therefore it is my determination that there will be no impact to Lavin's egg milkvetch.

**Upswept moonwort:** There is no potential habitat for upswept moonwort within the project area due to the lack of moist, spring areas; therefore it is my determination that this project will not impact upswept moonwort.

**Dainty moonwort:** There is no potential habitat within the project area for dainty moonwort due to the lack of moist, spring and meadow areas; therefore it is my determination that this project will not impact dainty moonwort.

**Slender moonwort:** There is no potential habitat within the project area for slender moonwort due to the lack of meadow habitats; therefore it is my determination that this project will not impact slender moonwort.

**Seaside sedge:** There is no potential habitat for seaside sedge due to the lack of moist tundra and wet rock ledges; therefore it is my determination that this project will not impact seaside sedge.

**Bodie Hills draba:** The project area is composed of primarily granitic and sandy soils and lacks the clay soils commonly associated with Bodie Hills draba; therefore it is my determination that this project will not impact Bodie Hills draba.

**Star draba:** There is no potential habitat for Star draba within the project area due to the lack of granitic outcrops and steep talus habitats, and due to the low elevation of the project area; therefore it is my determination that this project will not impact star draba.

**Mono buckwheat:** There are suitable habitat features within the project area for Mono buckwheat, including sandy pumice soils and sagebrush with pinyon-juniper woodland plant communities. However, no plant occurrences were found during the field surveys; therefore it is my determination that this project will not impact Mono buckwheat.

**Mono phacelia:** There is no potential habitat for Mono phacelia within the project area due to the lack of alkaline or clay soils. Soils/geology of the project area is comprised primarily of volcanic rock outcrops with very sandy soils; therefore it is my determination that this project will not impact Mono phacelia.

**Marsh's bluegrass:** There is no potential habitat for Marsh's bluegrass within the project area due to lack of alpine habitat and the elevational range; therefore it is my determination that this project will not impact Marsh's bluegrass.

**William's combleaf:** There is no potential habitat within the project area for William's combleaf due to the lack of ephemeral lakes and the elevational range; therefore it is my determination that this project will not impact William's combleaf.

**Masonic Mountain jewel flower:** There are suitable habitat features for Masonic Mountain jewel flower within the project area, including sandy soils, volcanic rock outcrops, with sagebrush and pinyon-juniper plant communities. However, no plant occurrences were observed during the field survey; therefore it is my determination that this project will not impact Masonic Mountain jewel flower.

## **WILDLIFE MANAGEMENT RECOMMENDATIONS**

1. All trash created during construction will be properly contained (wildlife-proof containers) and removed at the end of each day. No trash will be left overnight on site due to the potential of attracting wildlife.
2. Any detection of threatened, endangered, or sensitive species, or location of nests or dens of these species will be reported to the Forest Wildlife Biologist or Forest

Botanist. These nests, dens, or plant locations would be protected in accordance with the Forest Plan.

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## APPENDIX A

### Fletcher Junction Project Area Species List

#### A.) Plant Species Observed

##### Botanical Name

*Abronia turbinata*  
*Achnatherum comata*  
*Achnatherum hymenoides*  
*Achnatherum speciosum*  
*Achnatherum thurberianum*  
*Agoseris glauca*  
*Arabis holboellii* var. *refracta*  
*Arabis puberula*  
*Arabis pulchra* var. *pulchra*  
*Arabis sparsiflora* var. *sparsiflora*  
*Artemisia arbuscula*  
*Artemisia tridentata* ssp. *tridentata*.  
*Artemisia tridentata* ssp. *vaseyana*  
*Aster scopulorum*  
*Astragalus casei*  
*Astragalus curvicaupus* var. *curvicaupus*  
*Astragalus lentiginosus* var. *lentiginosus*  
*Astragalus purshii*  
*Atriplex canescens*  
*Atriplex confertifolia*  
*Bassia hyssopifolia*  
*Blepharippapus scabra*  
*Bromus tectorum*  
*Calochortus brunealis*  
*Calyptridium parryi* var. *nevadense*  
*Camissonia claviformis* var. *purpurascens*  
*Camissonia parvula*  
*Cardaria pubescens*  
*Carex douglasii*  
*Castilleja chromosa*  
*Caulanthus pilosus*  
*Centaurea repens*  
*Chaenactis douglasii*  
*Chaenactis steveiodes*  
*Chenopodium album*  
*Chenopodium* sp.  
*Chorizanthe brevicornu*  
*Chrysothamnus nauseosus*  
*Chrysothamnus viscidiflorus* var. *puberulus*  
*Chrysothamnus viscidiflorus* var. *viscidiflorus*

##### Common Name

Transmontane sand verbena  
 Needle and thread grass  
 Indian ricegrass  
 Desert needlegrass  
 Thurber's needlegrass  
 Desert dandelion  
 Holboell rock cress  
 Rockcress  
 Rockcress  
 Sickie pod rockcress  
 Low sagebrush  
 Big sagebrush  
 Mountain sagebrush  
 Lava aster  
 Case milkvetch  
 Sickie milkvetch  
 Freckled milkvetch  
 Pursh milkvetch  
 Four-wing saltbrush  
 Shadscale  
 Four horn smotherweed  
 Blepharippapus  
 Cheatgrass  
 Mariposa lily  
 Parry's pussypaws  
 Clavate-fruit primrose  
 Primrose  
 Hoarycress  
 Douglas sedge  
 Desert paintbrush  
 Hairy wild cabbage  
 Russian knapweed  
 Douglas pincushion  
 Steve's pincushion  
 Lamb's quarters  
 Chenopod  
 Brittle chorizanthe  
 Rubber rabbitbrush  
 Puberulent green rabbitbrush  
 Green rabbitbrush

## Fletcher Junction Project Area Species List

### A.) Plant Species Observed

<i>Cirsium vulgare</i>	Bull thistle
<i>Claytonia rubra</i>	Red miner's lettuce
<i>Collinisa parviflora</i>	Blue-eyed Mary's
<i>Crepis occidentalis</i>	Hawksbeard
<i>Cymopterus globosus</i>	Ball spring parsley
<i>Cryptantha circumscissa</i>	Cushion cryptantha
<i>Cryptantha pterocarya</i>	Wingnut cryptantha
<i>Delphinium parishii</i>	Parish' larkspur
<i>Descurainia californica</i>	California tansy mustard
<i>Descurainia pinnata</i>	Tansy mustard
<i>Eatonella nivea</i>	White eatonella
<i>Elymus elymoides</i>	Squirreltail grass
<i>Ephedra nevadensis</i>	Nevada ephedra
<i>Ephedra viridis</i>	Green ephedra
<i>Epilobium brachycarpum</i>	Epilobium
<i>Eriastrum sparsiflorum</i>	Few-flowered eriastrum
<i>Erigeron aphanactis</i>	Rayless daisy
<i>Erigeron pumilus</i>	Hairy fleabane
<i>Eriogonum deflexum</i> var. <i>nevadense</i>	Deflexed buckwheat
<i>Eriogonum microthecum</i> var. <i>laxiflorum</i>	Great Basin buckwheat
<i>Eriogonum ovalifolium</i> var. <i>nevadense</i>	Cushion buckwheat
<i>Eriogonum pusillum</i>	Puny buckwheat
<i>Eriogonum umbellatum</i> var. <i>nevadense</i>	Sulphur-flower buckwheat
<i>Eriogonum vimineum</i>	Wicker buckwheat
<i>Galium bifolium</i>	Bedstraw
<i>Gayophytum diffusum</i>	Diffuse groundsmoke
<i>Gayophytum ramosissimum</i>	Gayophytum
<i>Gilia filiformis</i>	Gilia
<i>Gilia inconspicua</i> var. <i>inconspicua</i>	Shy gilia
<i>Gilia inyoensis</i>	Inyo gilia
<i>Gilia salticola</i>	Gilia
<i>Gilia tenerrima</i>	Gilia
<i>Grayia spinosa</i>	Hopsage
<i>Halogeton glomerata</i>	Halogeton
<i>Iva axillaris</i>	Poverty weed
<i>Juniperus osteosperma</i>	Utah juniper
<i>Krascheninnikovia lanata</i>	Winterfat
<i>Lactuca serriola</i>	Prickly lettuce
<i>Layia glandulosa</i>	Tidytips
<i>Leptodactylon pugens</i>	Prickly phlox
<i>Leymus cinereus</i>	Great Basin wildrye
<i>Leymus triticoides</i>	Creeping wildrye
<i>Linanthus septentrionalis</i>	Northern linanthus

## Fletcher Junction Project Area Species List

### A.) Plant Species Observed

<i>Lupinus brevicaulis</i>	Short-stem lupine
<i>Machaeranthera canescens</i>	Hoary aster
<i>Malacothrix glabrata</i>	Desert dandelion
<i>Malacothrix torreyi</i>	Torrey desert dandelion
<i>Mentzelia albicaulis</i>	White-stem blazing star
<i>Mimulus coccineus</i>	Sierra monkey flower
<i>Mirabilis bigelovii</i> var. <i>bigelovii</i>	Biglove's four o'clock
<i>Nama aretioides</i>	Purple mat
<i>Navarretia breweri</i>	Yellow navarretia
<i>Opuntia erinacea</i>	Mojave prickly pear
<i>Opuntia pulchella</i>	Sand cholla
<i>Orobanche corymbosa</i>	Rydberg broomrape
<i>Oxytheca dendroidea</i> ssp. <i>dendroidea</i>	Oxytheca
<i>Penstemon humilis</i> var. <i>humilis</i>	Low penstemon
<i>Phacelia humilis</i>	Low phacelia
<i>Phacelia bicolor</i> var. <i>bicolor</i>	Two color phacelia
<i>Phacelia glandulifera</i>	Sticky phacelia
<i>Phlox gracilis</i>	False phlox
<i>Phlox longifolia</i>	Long-leaved phlox
<i>Phoenicaulis cheiranthoides</i>	Dagger pod
<i>Pinus monophylla</i>	Single-leaf piñon pine
<i>Pleuraphis jamesii</i>	Galleta grass
<i>Poa secunda</i>	Sandberg bluegrass
<i>Polygonum arenastrum</i>	Knotweed
<i>Polypogon monspeliensis</i>	Rabbit's foot grass
<i>Prunus andersonii</i>	Desert peach
<i>Psathyrotes annua</i>	Mealy rosettes
<i>Puccinella nuttalliana</i>	Nuttall's alkalai grass
<i>Purshia tridentata</i>	Bitterbrush
<i>Ranunculus testiculatus</i>	Burry buttercup
<i>Salsola tragus</i>	Russian thistle
<i>Sarcobates vermiculatus</i>	Greasewood
<i>Sisymbrium altissimum</i>	Tumble mustard
<i>Sphaeralcea parvifolia</i>	Desert mallow
<i>Sporobolus cryptandrus</i>	Sand dropseed
<i>Stenotus acaulis</i>	Cushion goldenweed
<i>Stephanomeria exigua</i> ssp. <i>exigua</i>	Wire lettuce
<i>Stephanomeria pauciflora</i>	Few flowered wire lettuce
<i>Tetradymis canescens</i>	Smooth horsebrush
<i>Tetradymia glabrata</i>	Little leaf horsebrush
<i>Thelypodium milleflorum</i>	Sand dune thelypody
<i>Tiquilia nuttalli</i>	Rosette tiquilia
<i>Vulpia octoflora</i> var. <i>hirtella</i>	Six weeks fescue
<i>Zigadenus paniculatus</i>	Panicled zyadene

## Fletcher Junction Project Area Species List

### B.) Wildlife Species Observed

#### Common Name

Western tanager  
Northern flicker  
Mountain bluebird  
Mourning dove  
Rock wren  
Pinyon jay  
Green tailed towhee  
Red-tailed hawk  
Vesper sparrow  
Blue-gray gnatcatcher  
Sage thrasher  
Common raven  
Sage sparrow  
Mountain chickadee

Mule deer \*  
Unidentified chipmunk  
Woodrat \*  
Coyote \*  
Black tailed jackrabbit  
Side blotched lizard  
Fence lizard

#### Latin Name

*Piranga ludoviciana*  
*Colaptes auratus*  
*Sialia mexicana*  
*Zenaida macroura*  
*Salpinctes obsoletus*  
*Gymnorhinus cyanocephalus*  
*Pipilo erythrophthalmus*  
*Buteo jamaicensis*  
*Pooecetes gramineus*  
*Poliophtila caerulea*  
*Oreoscoptes montanus*  
*Corvus corax*  
*Amphispiza belli*  
*Parus gambeli*

*Odocoileus hemionus*  
*Tamias spp.*  
*Neotoma spp.*  
*Canis latrans*  
*Lepus californicus*  
*Uta stansburiana*  
*Sceloporus occidentalis*

\* Identified by sign such as scat, tracks, burrows, dens

**APPENDIX B**  
**Invasive Plant Species Records**



**APPENDIX C**  
**Agency Database Search Result Letters**

**ATTACHMENT A**  
**Wildlife and Botany Survey Route Maps**